

ABSTRACT OF THE DISCLOSURE

An optical scanner which performs optical scanning of a surface to be scanned by deflecting a luminous flux having a wavelength  $\lambda$  from a light source by means of an optical deflector, and condensing the deflected flux toward the surface to be scanned through a scanning image forming optical system, thereby forming an optical spot on the surface to be scanned. The scanning image forming optical system has at least one lens, and when the focal length  $f_{\sigma}$  in the main scanning direction at a surface accuracy  $\sigma_i$  is defined as follows:  $f_{\sigma} = \{2.6846 \lambda \times \sqrt{(k) \times f_m^2 / \omega^2}\} - f_m$  where,  $f_m$  represents the focal length in the main scanning direction of the scanning image forming optical system;  $k$  represents the number of lens surfaces;  $\omega$  represents the aimed spot diameter of the optical spot in the main scanning direction at an image height of 0;  $\sigma_i$  represents the surface accuracy of the  $i$ -th lens surface as counted from the optical deflector side;  $n$  represents the refractive index of material of the lens having the  $i$ -th lens surface; and  $1/L$  represents the spatial frequency in the main scanning direction on the lens surface; then, the surface accuracy  $\sigma_i$ , the focal length  $f_{\sigma}$ , the refractive index  $n$ , and the spatial frequency  $1/L$  satisfy, for each lens surface, the following condition:

$$(1) \quad 0 < \log \sigma_i < -2 \log (1/L) + \log [1/\{32 f \sigma^{(n-1)}\}].$$

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